

FIG. 1

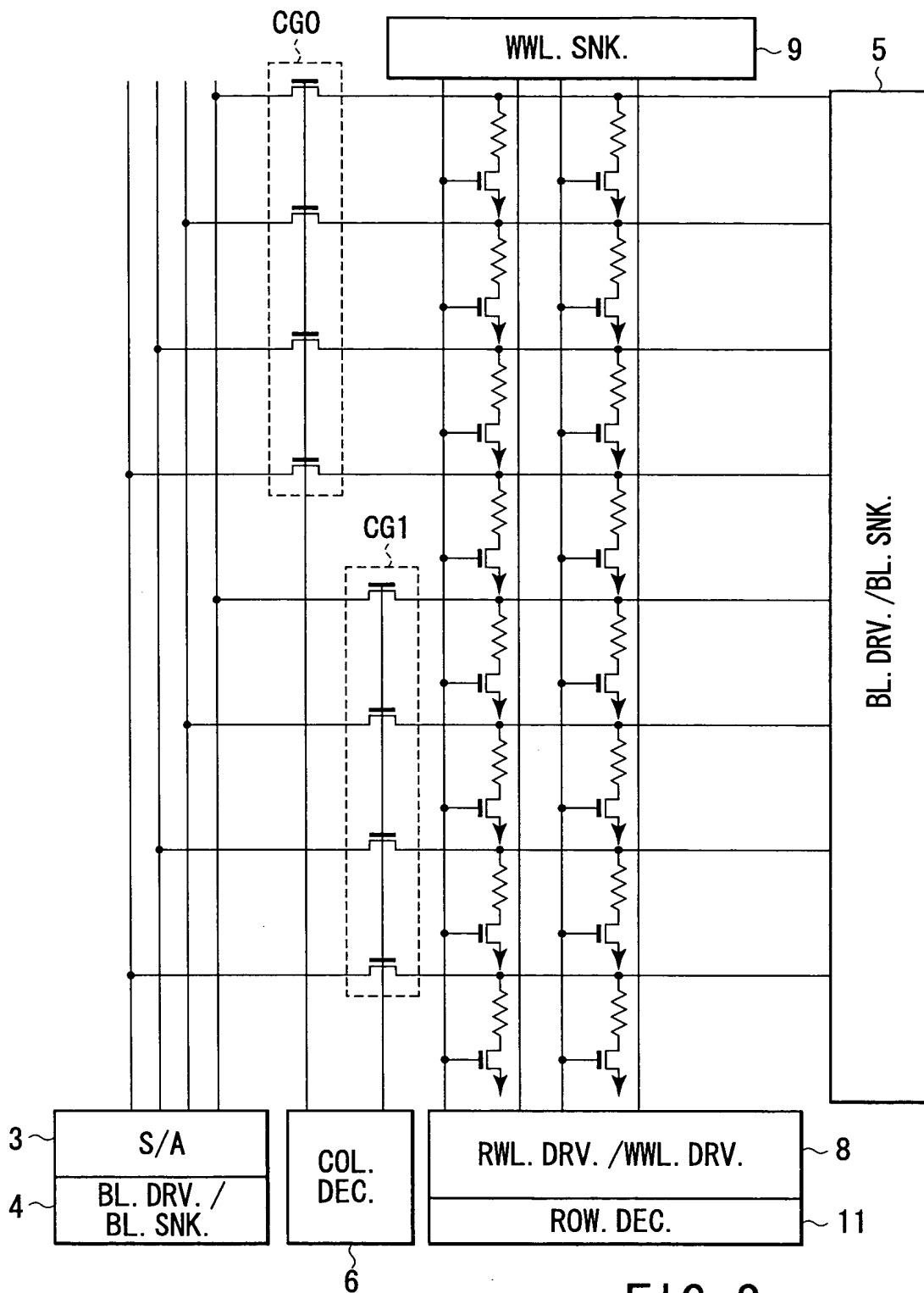


FIG. 2

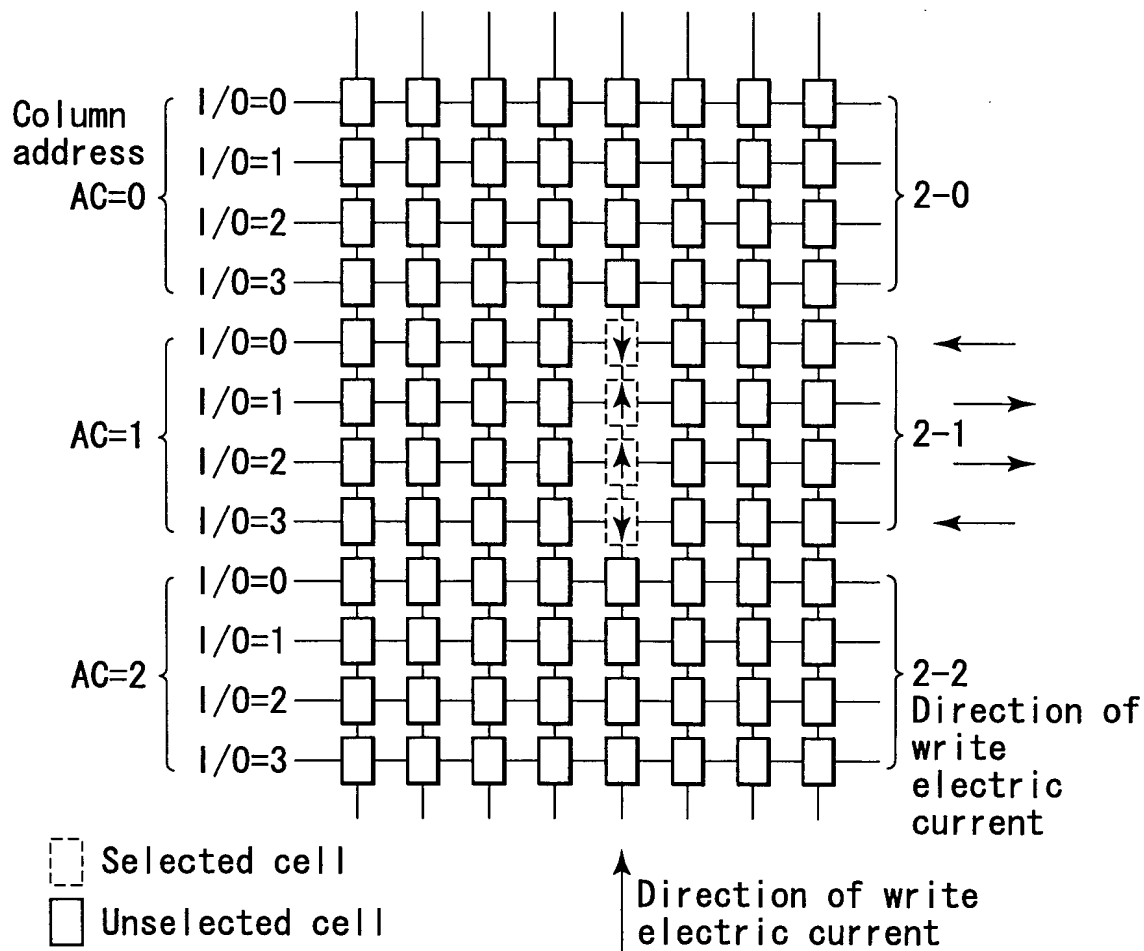
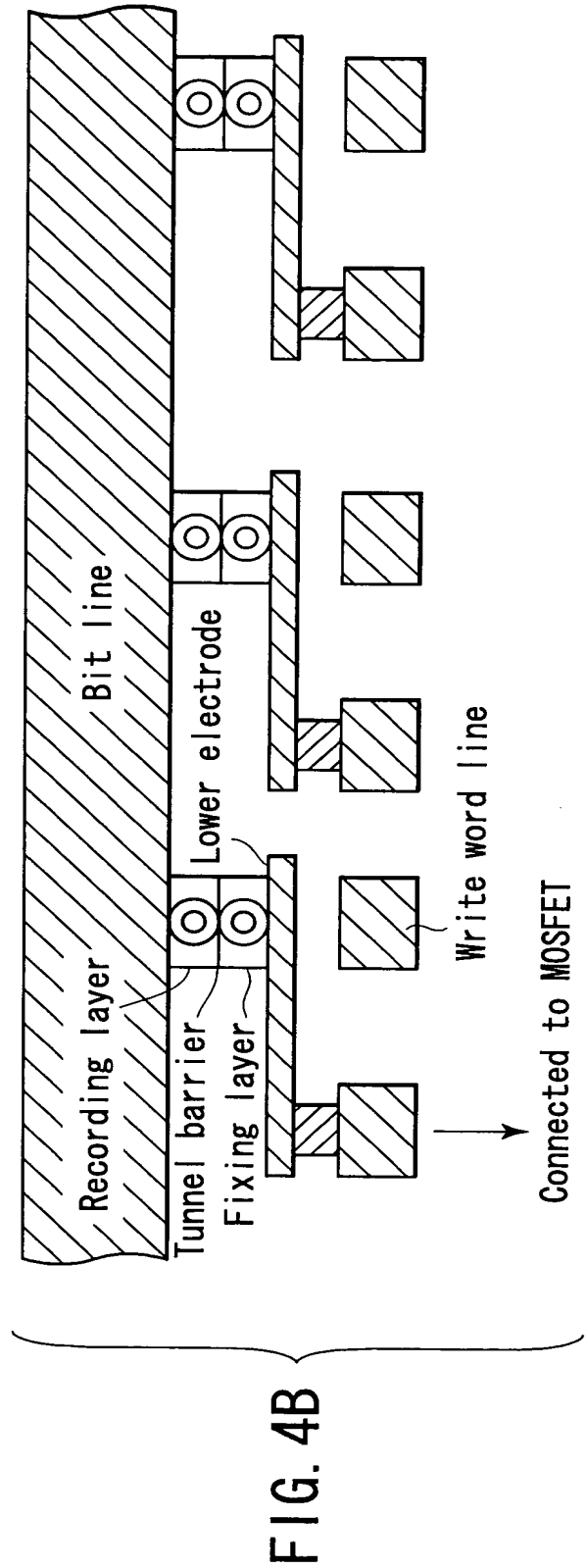
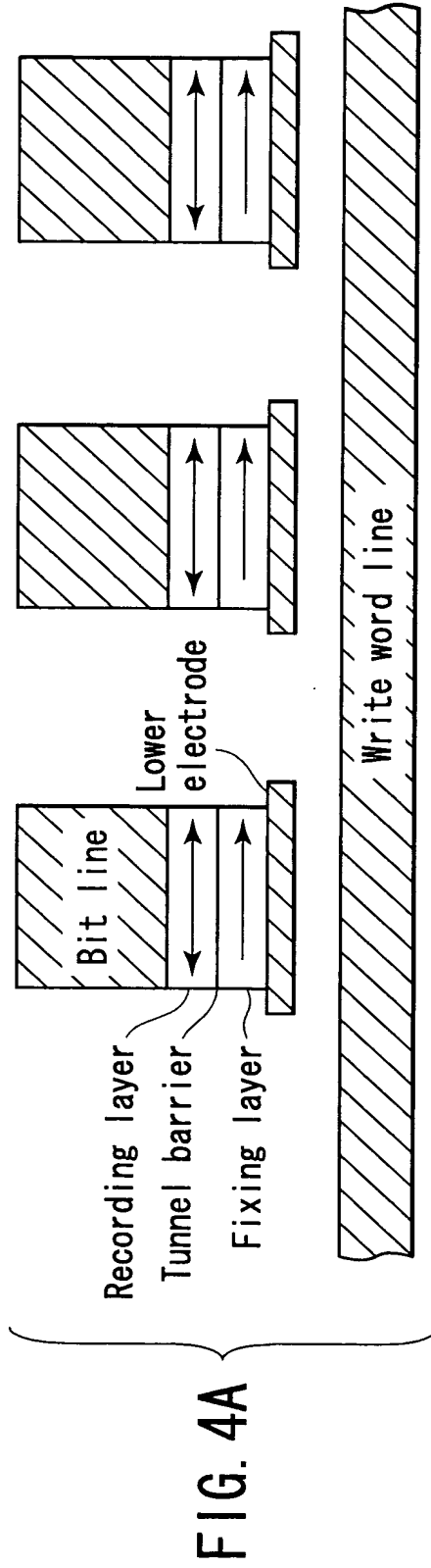


FIG. 3



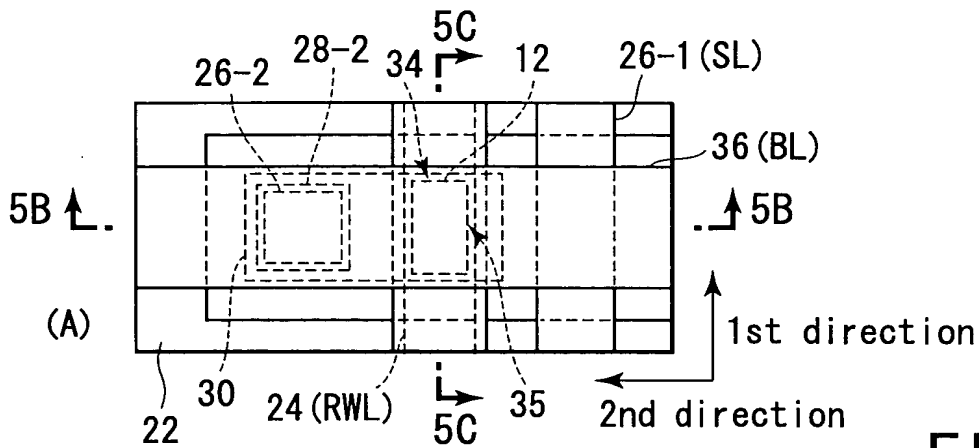


FIG. 5A

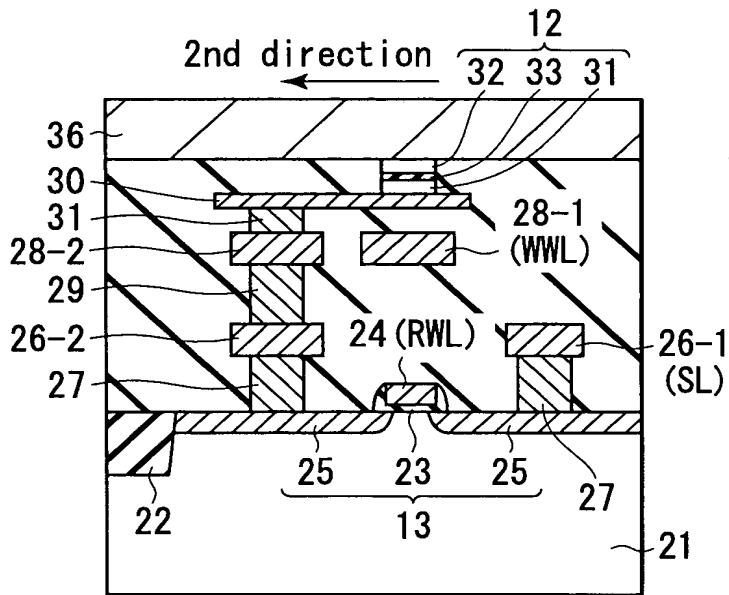


FIG. 5B

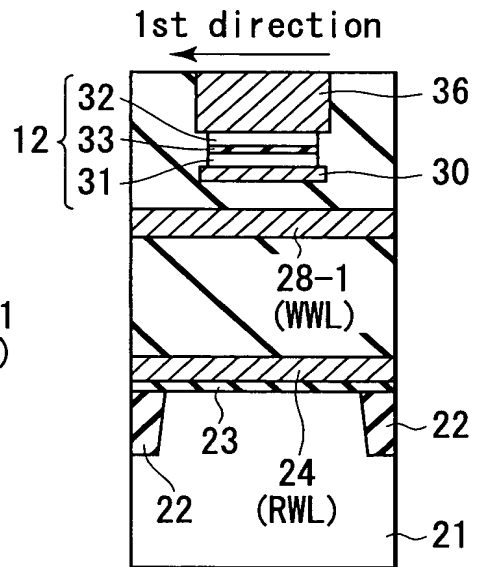


FIG. 5C

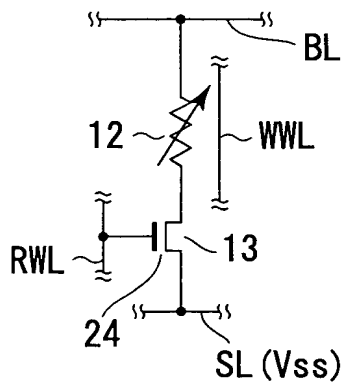


FIG. 5D

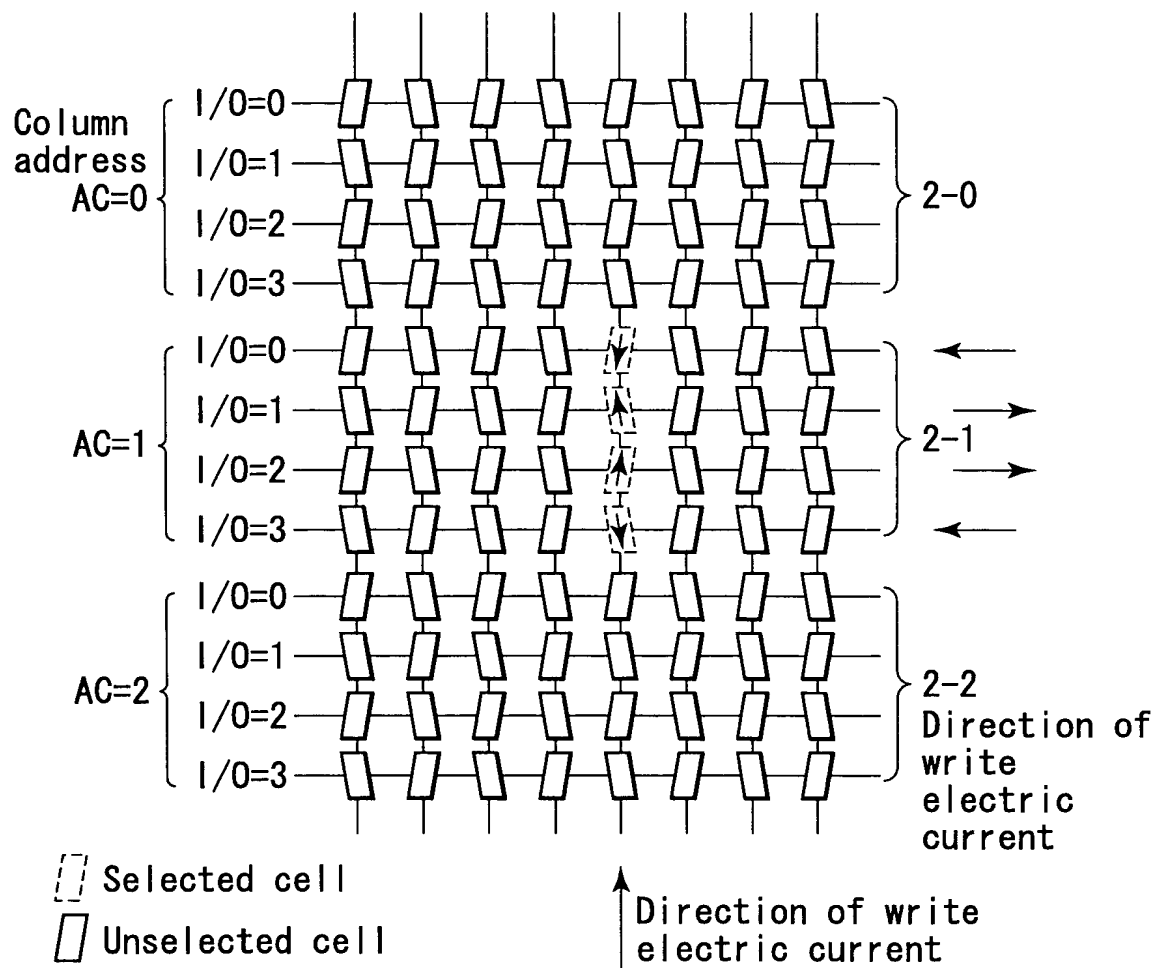
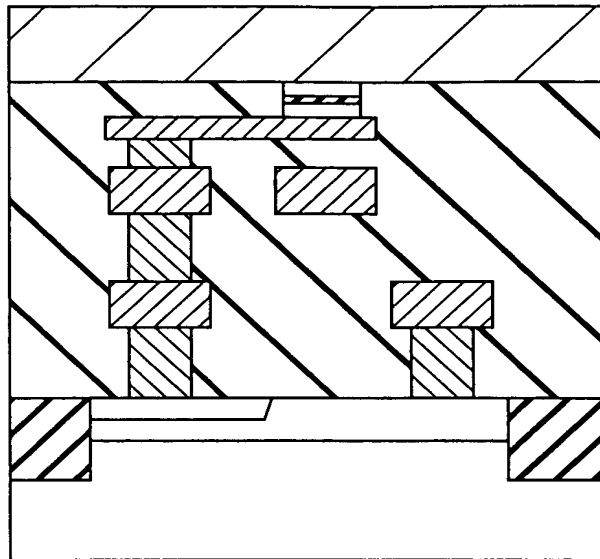
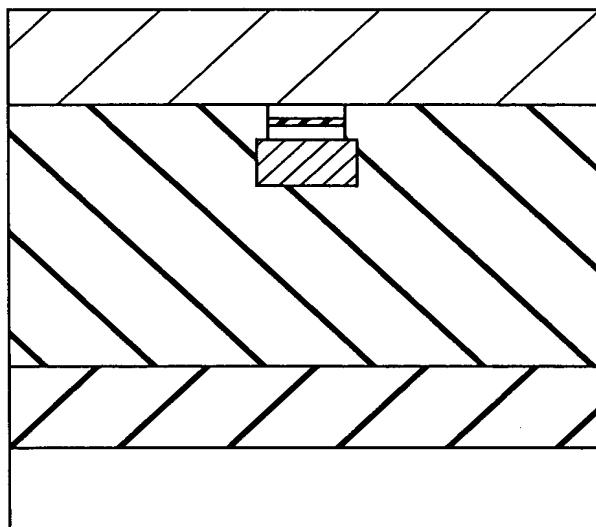


FIG. 6



Cell using diode as switching element

FIG. 8



Cross point cell having no switching element

FIG. 9

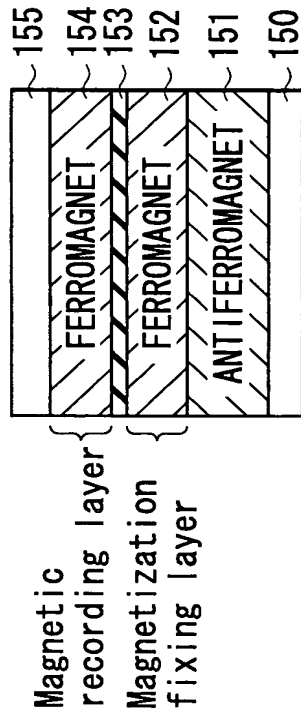


FIG. 10A

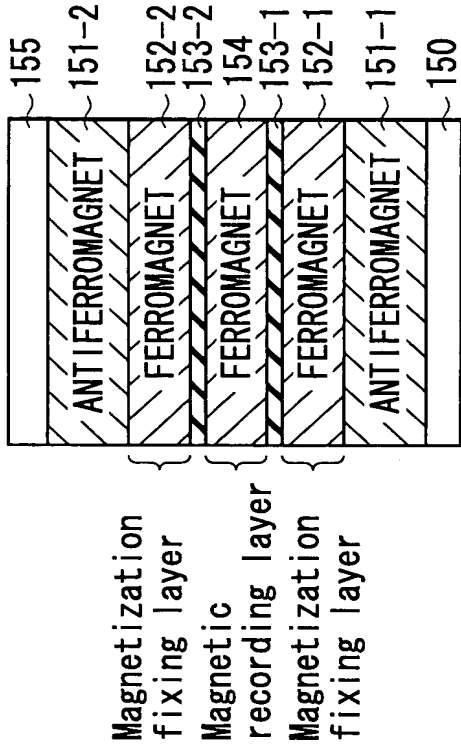


FIG. 10B

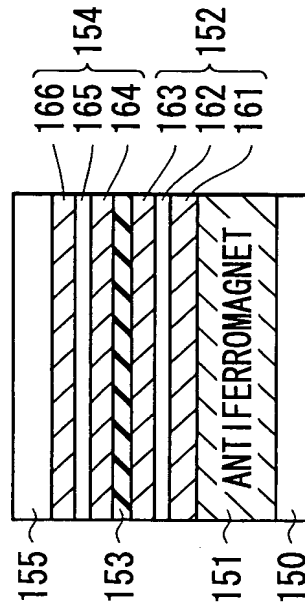


FIG. 10C

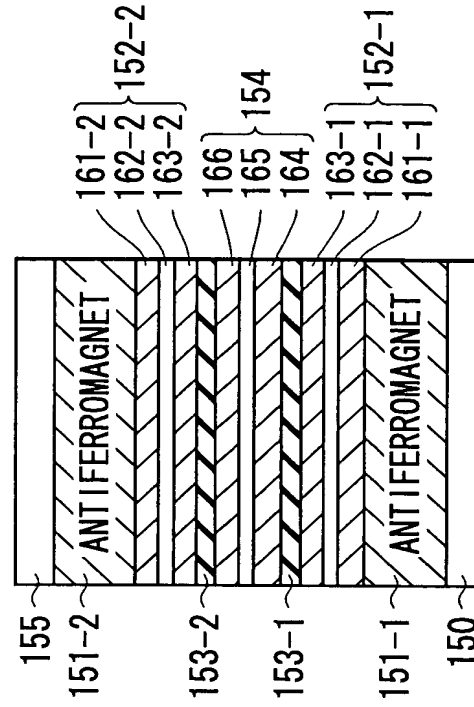


FIG. 10D

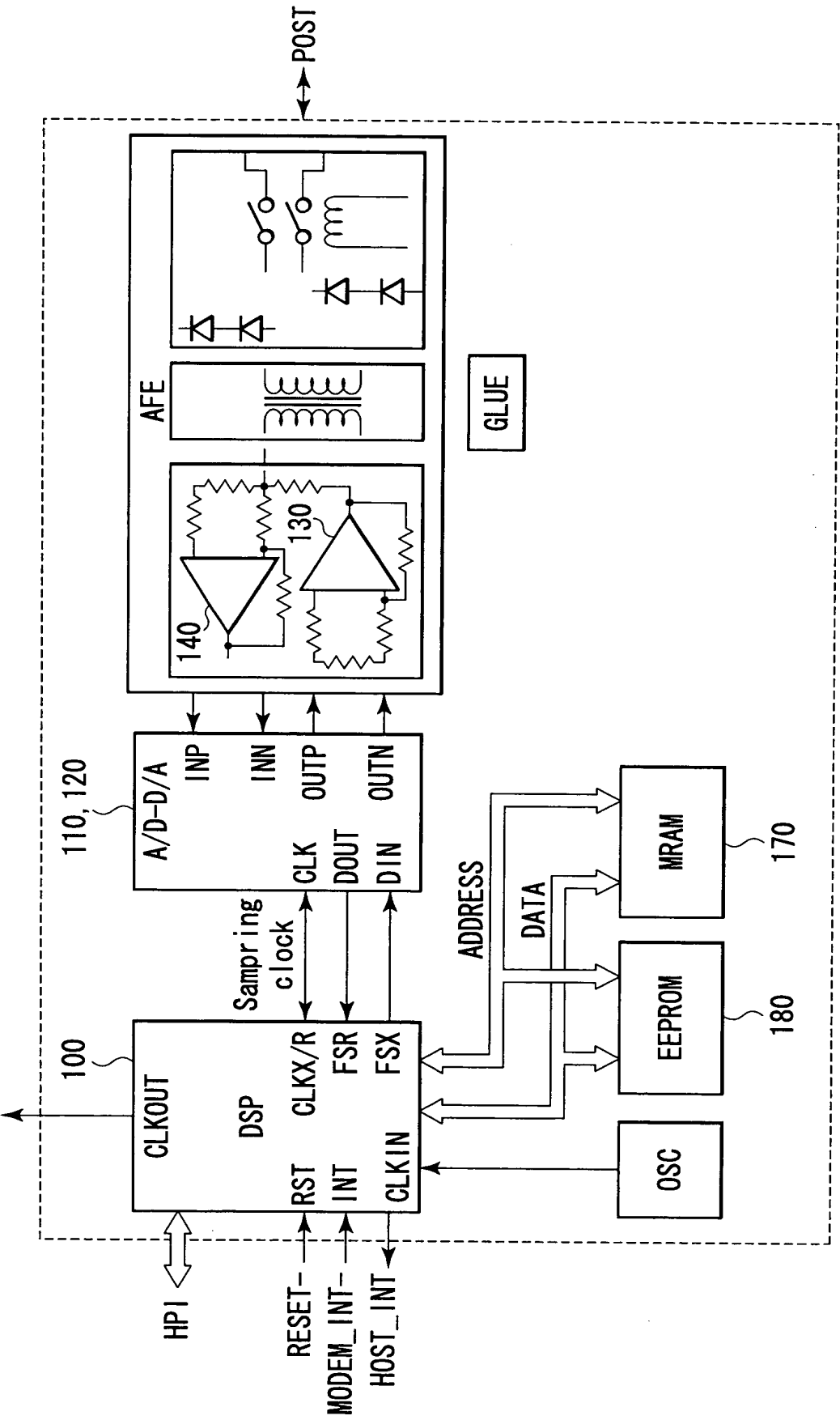


FIG. 11

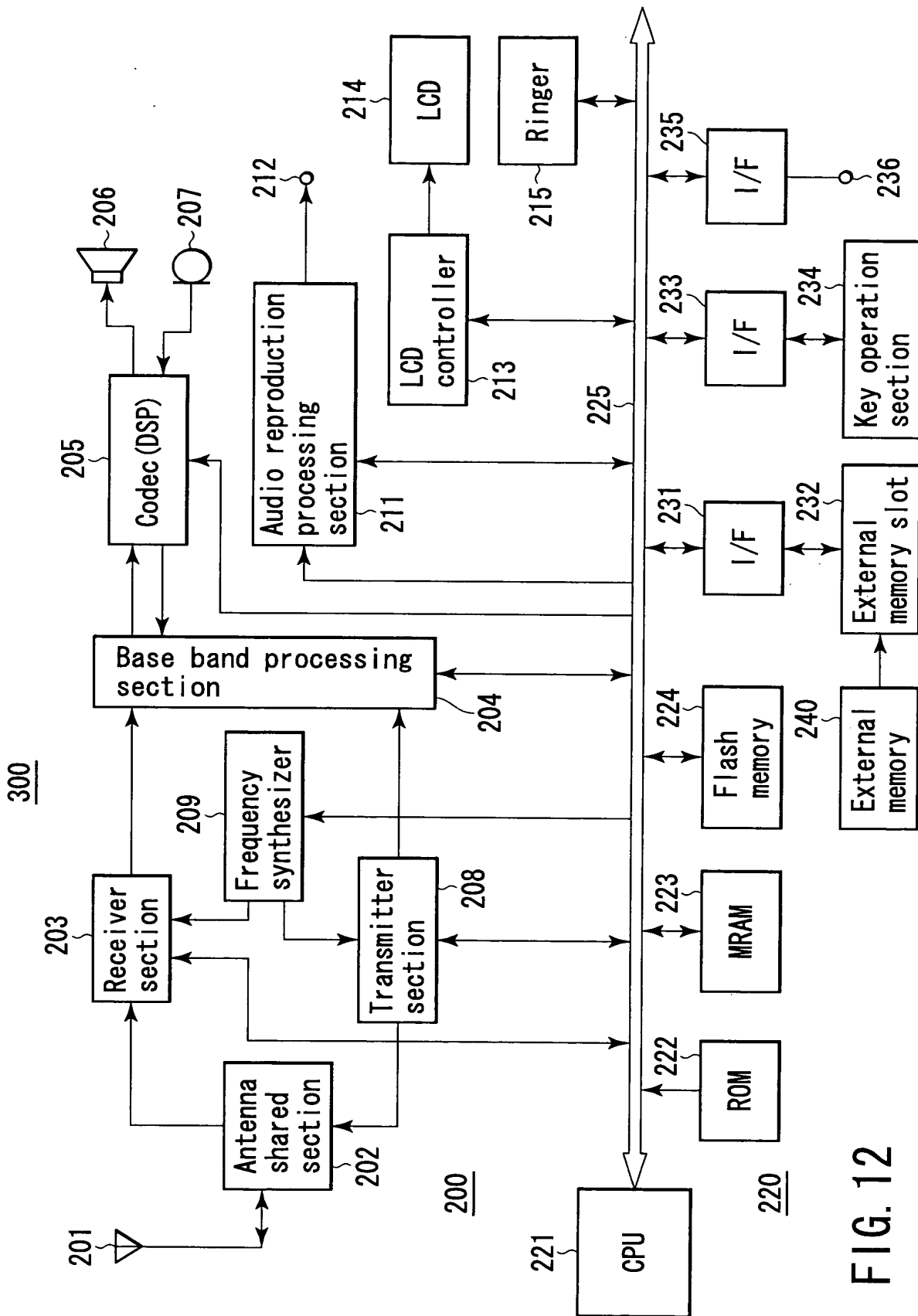


FIG. 12

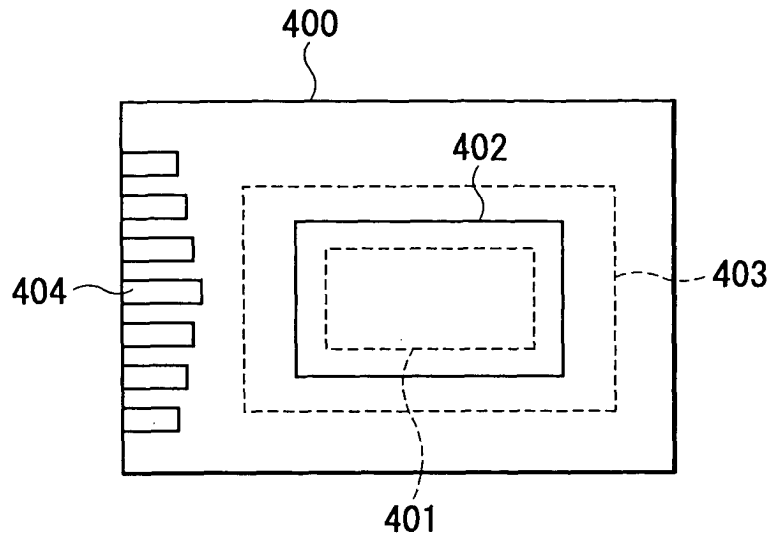
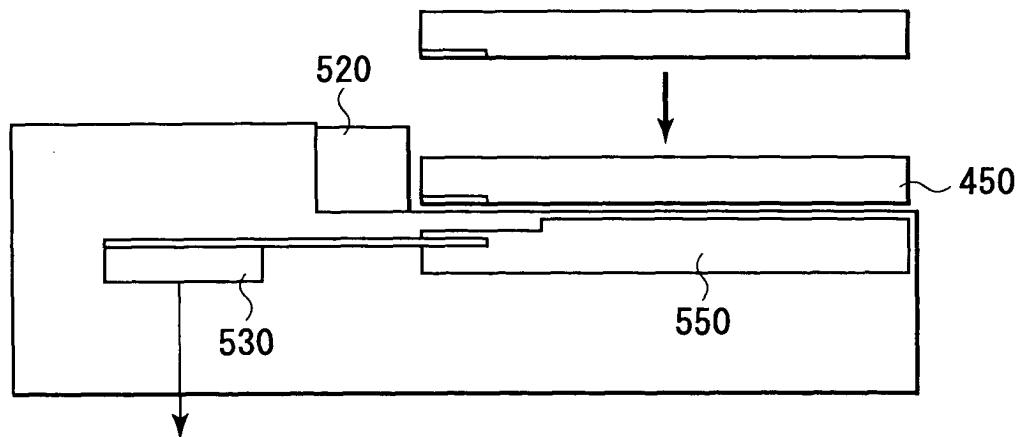


FIG. 13



Transfer first MRAM data to
write control section

FIG. 16

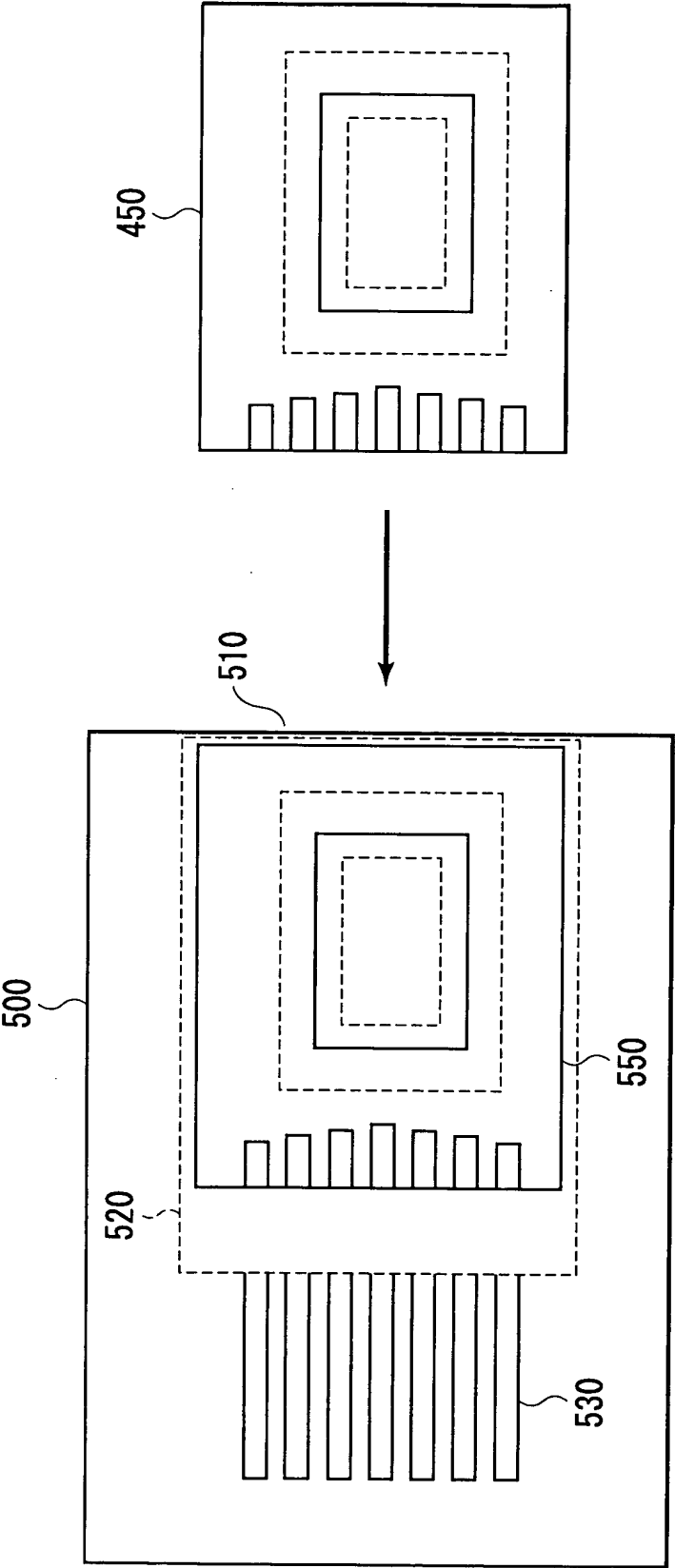


FIG. 14

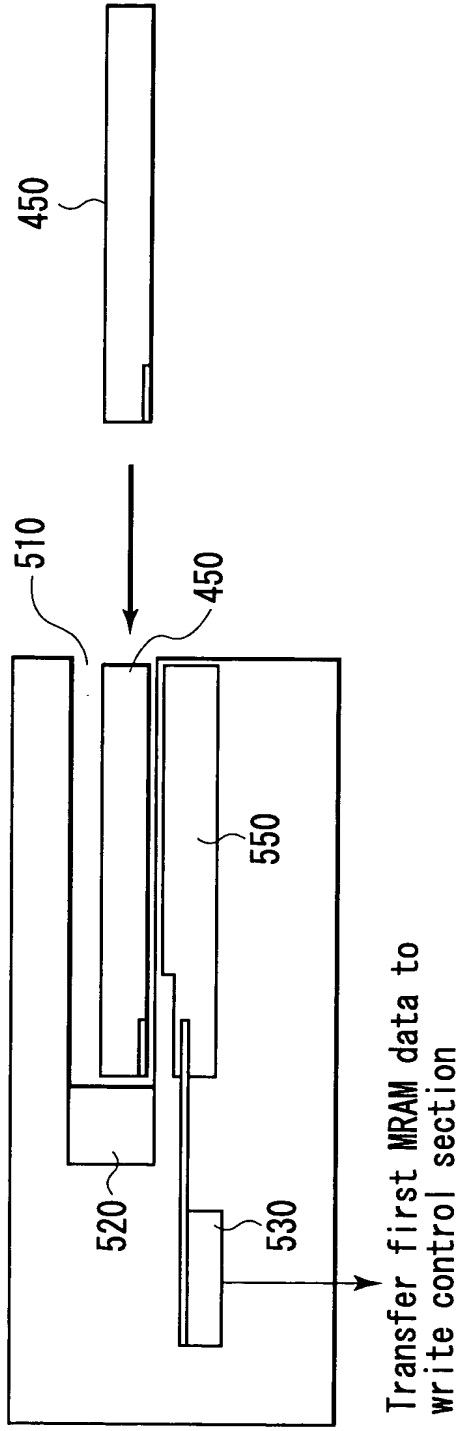


FIG. 15

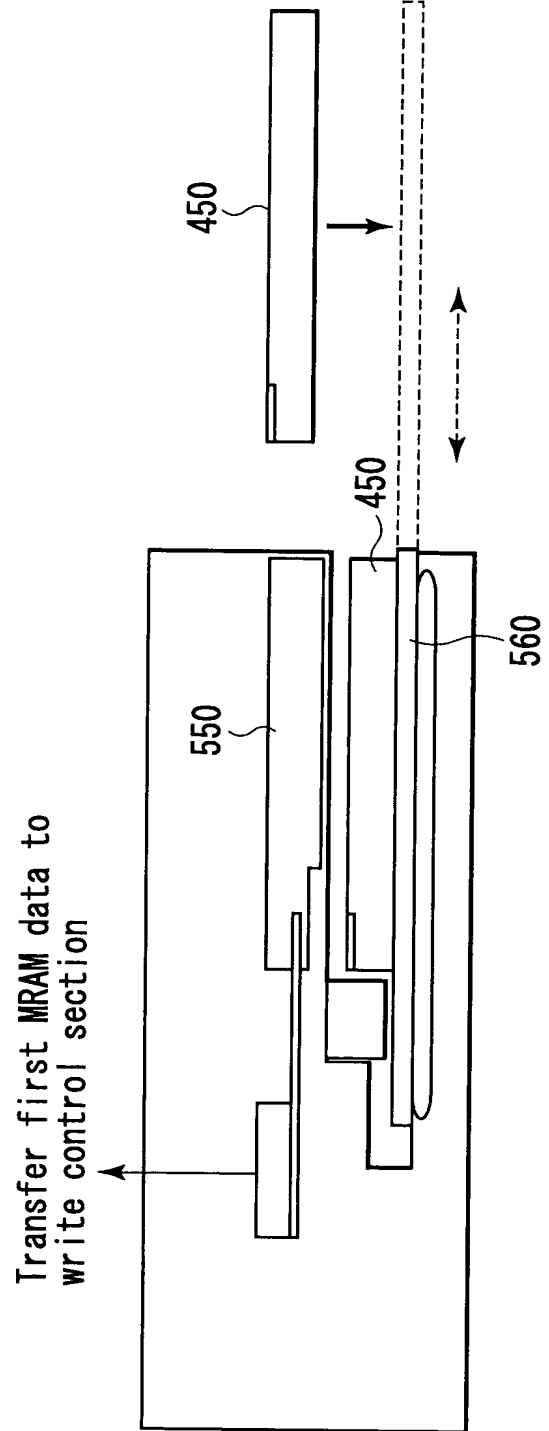
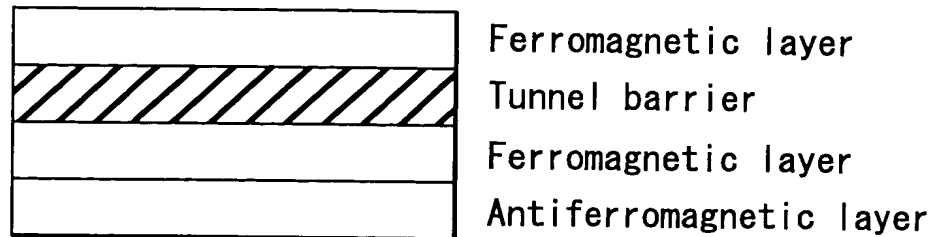
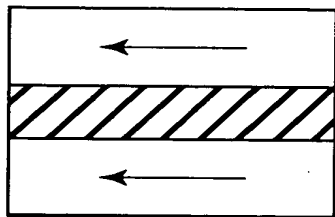


FIG. 17

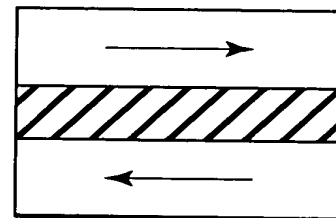


TMR (tunnel magneto-resistive) element

FIG. 18



Parallel
(small resistance)



Opposite parallel
(large resistance)

TMR Effect

FIG. 19A

FIG. 19B

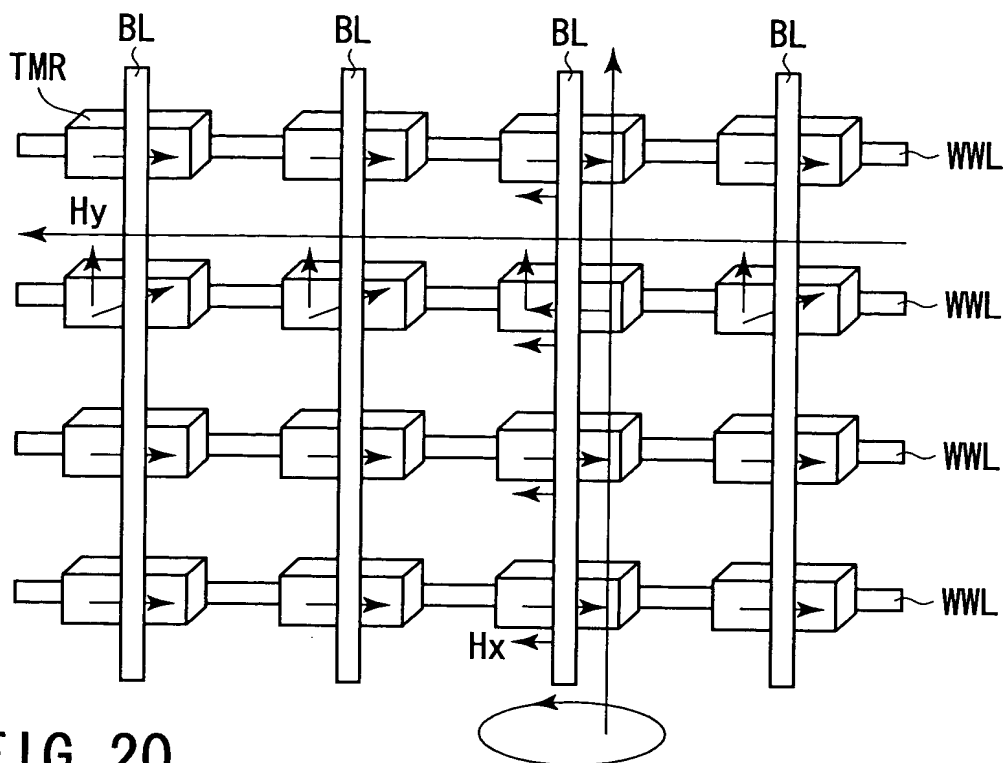


FIG. 20

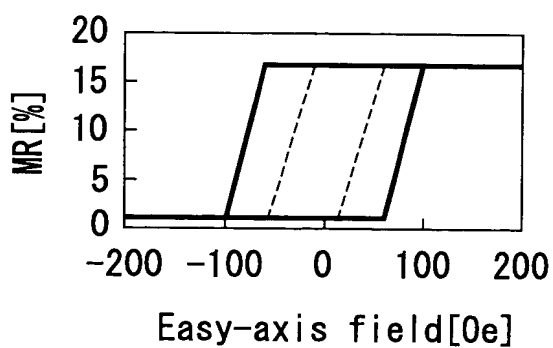


FIG. 21A

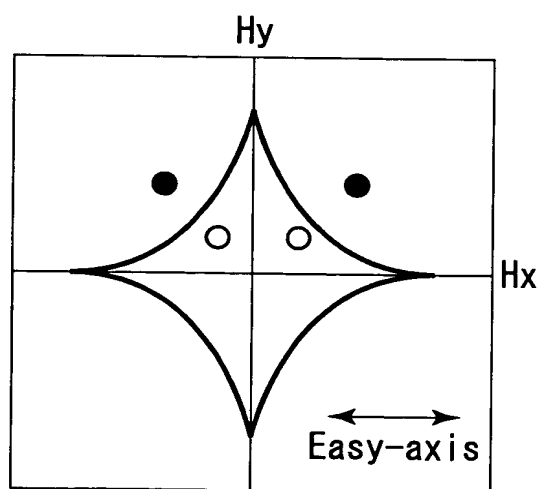


FIG. 21B